

China upgrades surveillance and control measures of Middle East respiratory syndrome (MERS)

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Summary

Three years after the identification of Middle East respiratory syndrome coronavirus (MERS-CoV) in Saudi Arabia, the first case of MERS in China was reported on May 29, 2015. Although the Chinese government issued the MERS Prevention and Control Plan in 2013, a novel edition was released on June 5, 2015 to better cope with the current epidemic situation. The revised Plan refines the descriptions in case-finding and establishment of case-monitoring systems. In addition, tougher regulations on close contacts of confirmed patients and suspected cases are introduced in this new Plan. It is expected these countermeasures will play a greater role in surveilling and controlling MERS in China.

Keywords: MERS-CoV, NHFPC, fever of unknown origins, epidemic

Middle East respiratory syndrome coronavirus (MERS-CoV), first identified in 2012 in Saudi Arabia, caused 1,179 laboratory-confirmed cases of human infection in 25 countries in Middle East, Africa, Europe, Asia, and North America by June 3, 2015 according to the statistics disclosed by World Health Organization (WHO) (1). The first confirmed case of MERS in China, a man from the Republic of Korea, was claimed by National Health and Family Commission of People's Republic of China (NHFPC) on May 29, 2015 and is currently being treated in isolation in Huizhou Municipal Central Hospital, Huizhou, Guangdong province (2). This case comes from a family in which his father and elder brother were diagnosed with MERS and hospitalized in Korea earlier, suggesting an epidemiological link between the human cases.

Chinese health authorities have taken appropriate measures to prevent further transmission of the virus. By June 4, all the 78 close contacts of the patient had been found and isolated for observation, and there has no evidence of infection in the close contacts thus

far (3). To further strengthen the disease management and improve the epidemic situation report quality in medical and disease control organizations, NHFPC published the second edition of MERS Prevention and Control Plan on June 5, 2015 and specified it as the guideline for dealing with this disease in China (4). Comparing with the first edition that was announced in September 2013, this updated Plan refines the descriptions in case-finding and establishment of case-monitoring systems. In addition, tougher regulations on close contacts of confirmed patients and suspected cases are introduced in this new Plan.

Regulations on patients with fever of unknown origins NHFPC requires that health care workers in medical and health institutions at various levels and of various kinds shall strengthen the awareness of the diagnosis and report of MERS cases. For patients with fever of unknown origins, their travel histories or other suspected exposure experiences within the past 14 days should be asked. Specifically, it should be clarified whether the patients and their close contacts have travelled to Middle East countries such as Saudi Arabia, United Arab Emirates, Qatar, and Jordan. The new Plan adds the Republic of Korea as the at-risk country for travelling. In addition, medical staffs are required to ask whether the patients have experience of contacting suspected animals such as dromedary in the updated Plan. Once the patients are consistent with the definition of MERS, they should be timely reported to

Released online in J-STAGE as advance publication June 11, 2015.

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the local disease control prevention institutions.

Regulations on the confirmed and suspected cases NHFPC requires that the health care institutes that undertake the task of MERS treatment shall be well-prepared in terms of medical personnel, medicines, facilities, and protective equipment. In the administration of patients' treatment, the Plan presents that the MERS patients should be treated in isolation and the attended medical staff should be equipped with effective protection measures. For suspected patients, isolation for observation and treatment is also necessary for those who are not excluded from MERS-CoV infection. Prevention and protection measures should also be taken for health care workers and relevant personnel until the clinical syndrome such as fever and cough disappear or MERS-CoV infection is excluded.

Regulations on close contacts of confirmed and suspected cases In the first edition, only the close contacts of confirmed patients demands medical observation at home and those with relevant syndrome should be further isolated. Close contacts of suspected cases should be just registered. In the revised edition, more rigorous regulations are presented for these two kinds of cases. In the current stage, all the close contacts of confirmed patients should be isolated for observation during which body temperature and acute respiratory or MERS-relevant symptoms should be monitored. For those close contacts of suspected cases, NHFPC requires that both registration and health

follow-up should be carried out. These people should be informed that they shall notify medical institutes if symptoms such as fever, cough, and diarrhea appear.

From severe acute respiratory syndromes (SARS) to MERS, China has developed a relatively integrated monitoring and responding system in the past ten years. For example, four-level frame system from county to country has been established for disease prevention and control, which guarantees a rapid response for infectious diseases. However, more MERS cases will possibly be imported into China, as pointed by the Officials of Chinese health authorities, requiring cautious countermeasures of the government in the future.

References

1. Summary and risk assessment of current situation in Republic of Korea and China. World Health Organization. http://www.who.int/csr/disease/coronavirus_infections/risk-assessment-3june2015/en/ (Accessed June 7, 2015).
2. News. China reports first MERS case. http://en.nhfpc.gov.cn/2015-06/01/content_20874634.htm (Accessed June 8, 2015).
3. News. Circular of epidemic situation. <http://www.gdwst.gov.cn/a/yiqingxx/2015060513703.html> (Accessed June 8, 2015).
4. MERS Prevention and Control Plan (2nd edition). <http://www.nhfpc.gov.cn/jkj/s3577/201506/f47f22f52614406798df6363d3e2d199.shtml> (Accessed June 8, 2015).

(Received June 8, 2015; Accepted June 9, 2015)